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# Evaluation and improvement of high-resolution models for regional oceans around Canada

Youyu Lu (1), Li Zhai (1), Jean-Philippe Paquin (1), Ji Lei (1), Jiaxing Li (2), Fatemeh Chgini (3), and Frederic Dupont (4)

(1) (Youyu.Lu@dfo-mpo.gc.ca) (1) Bedford Institute of Oceanography, Fisheries and Oceans Canada , (2) (2) College of Marine Science and Engineering, Tianjin University of Science and Technology, (3) (3) Department of Oceanography, Dalhousie University, (4) (4) Meteorological Research Division, Environment Canada

A set of high-resolution regional ocean models based on the Nucleus for European Modelling of the Ocean (NEMO) are being developed for ocean forecasting and research applications in Canada. The horizontal resolutions of these models are 2-10 km for covering large basins and shelf seas, and 0. 5 km for coastal waters. The solutions of these models, in terms of velocity, vorticity and horizontal gradient of temperature and salinity, show strong dependence on the choice of lateral viscosity coefficient. Various in situ and satellite remote sensing data are used to evaluate the model solutions and guide the model improvement. Finally, case studies demonstrate the value of high-resolution models in studying ocean dynamic processes and improving forecasting applications.